MATH + FEMALES = EXCITING CAREERS

A Conference for Girls and Their Parents

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"Math + Females = Exciting Careers" is the title of a conference designed to promote female participation in mathematics. Its purpose was to expand girls' perceptions of the career options available to them through the use of adult women role models. The conference was sponsored by the More Math for More Females Project, a project funded by an Education for Economic Security Act Grant through the State of New York.

The 1988 "Math + Females = Exciting Careers" conference was an all-day conference held on the campus of the State University of New York and attended by 515 persons. The program began with a keynote address by Joy Wallace, Director of the Math/Science Network in Oakland, California, and featured seventy-three workshops on the role of mathematics in various careers. The workshops were conducted by women representatives of these careers drawn from the community, local businesses and industry, the education profession, and a variety of organizations such as Women in Engineering, Women in Construction, the Urban League, and the American Association of University Women. These organizations were eager to assist us in offering suggestions and providing speakers.

The conference was open to girls in grades 4-12, whose "ticket of admission" was an accompanying parent. By targeting an audience which included not only girls but their parents as well, we hoped to help parents become more knowledgeable about the necessity for continuing mathematics study and ultimately to strengthen parental support for more rather than less mathematics for their daughters. We even held some sessions designed exclusively for parents. In addition, we provided box lunches and made speakers available during the lunch hour, enabling (and encouraging) the girls and their parents to have lunch with the speaker of their choice.

Two workshop sessions were presented in the morning following the keynote address and one was offered after lunch. Workshops were given grade-appropriate designations and participants could select the workshop of their choice during each of the three sessions. For example, "How to Encourage and Support 5th and 6th

Grade Girls in Math" was a workshop offered only for adults, while a team of women who represented financial planning, accounting, and other business careers offered a session in the morning for grades 4-8 and one in the afternoon for grades 9-12.

We found that attendance by girls in the upper elementary and middle school grades was far greater than attendance by high school students. Parents generally told us that their daughters had already formed their career plans by the time they were in high school.

Each participant in the conference received a fifty-page packet of materials containing information about mathematics and careers, suggestions for encouraging the continuation of mathematics study among girls, and female employment and remuneration data. A rich resource for such information is the Math/Science Network, Mills College, Oakland, CA 94613.

Copies of the preview issue of Thinking Families magazine, featuring a lead article on girls and math phobia entitled "Reaching for the Plus Column", were provided by the publisher for the cost of postage. Parents expressed surprise upon learning through this article of the 1986 College Placement Council Salary Survey, which revealed that 59% of the opening job offers went to the so-called "hard calculus" fields of engineering and the physical sciences, while 36% went to the "soft calculus" fields of business management, economics, agriculture, biology and the health sciences. In addition, the difference in salary between the "hard calculus" and "no calculus" fields was nearly $8,000. The salary differential together with the realization that 95% of the opening job offers went to fields requiring calculus forcefully made the point that continuing mathematics study throughout the four years of high school was of real importance for their daughters.

Response to the conference was overwhelmingly positive with evaluation data showing 100% of the responses affirmative to the question: "Should we do another career conference?". More than eighty percent of the girls attending felt that the day's activities had provided them with new information about the necessity for mathematics in various careers. Ninety-eight percent indicated that after attending the conference they thought they would need at least as much or more mathematics than they had planned to take in high school. Both girls and their parents were surprised to learn that the average woman with children can expect to spend a total

of 34 years in the workforce, while a single, divorced or widowed woman, can expect to work for 41 years. These statistics, together with the difference that mathematics study can make to both the type of employment and the salary earned, provided a convincing argument for continuing with mathematics.

More than eighty percent of the parents indicated that they had found new ways to help their daughters continue in their mathematics studies. These included providing opportunities for creative problem solving through home technology projects, chemistry sets, and puzzles; visits to museums, planetariums and science centers; involvement in such math related areas as home and auto repair and maintenance, and designing family gardens; and personal and business financial management skills such as budgeting. Involvement in volunteer projects related to any of the above was also encouraged, as were visits to women working within the local community in careers related to mathematics.

We feel strongly that such a career conference is well within the capability of any school or school system. The greatest requirements are time and interest. Local organizations such as Parent-Teacher Associations and other groups cited above need to be contacted to begin building a network of potential women speakers. Publicity efforts can be handled through school district community bulletins and the local newspaper. Local television can also be accessed. One of our local television stations devoted a half-hour program to our conference.

Teachers, program chairs, and other professionals interested in obtaining further information may contact the author (also the project director) at: School of Education and Human Development, State University of New York, Binghamton, NY 13901.

MATH SCRAMBLER answers:

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